



BDCP
Bay Delta Conservation Plan FISH FACILITIES TECHNICAL TEAM

Screen Design Principles

Select locations that have desirable hydraulic characteristics (uniform sweeping velocities, reduced turbulence)

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Screen Design Principles

Select locations on the Sacramento River as far north as possible to avoid areas of the river with the greatest susceptibility to tidal influence (i.e. reverse or stagnant flow conditions) in order to minimize fish exposure to screens

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Screen Design Principles


Select locations on the Sacramento River as far north as practicable to reduce the exposure of delta smelt, longfin smelt, and other estuarine species

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Screen Design Principles

Avoid the need to collect, concentrate, and handle fish passing the intake




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Screen Design Principles

Avoid bypasses that concentrate fish and increase the risk of predation




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Screen Design Principles

No “off-channel” system




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Screen Design Principles

Avoid creating areas where predators may congregate or where potential prey would have increased vulnerability to predation




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Screen Design Principles

Use the best proven technology in use



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Screen Design Principles

Use multiple smaller intakes (as opposed to a single large intake) to enhance fish protection with operational flexibility under varying flow conditions

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Screen Design Principles


Minimize the length of screen intake(s) to reduce the duration of exposure to the screen surface for fish

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Screen Design Principles

Avoid areas of existing riparian habitat



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Fish Screen Conceptual Proposals

Types of Screens:

On-bank

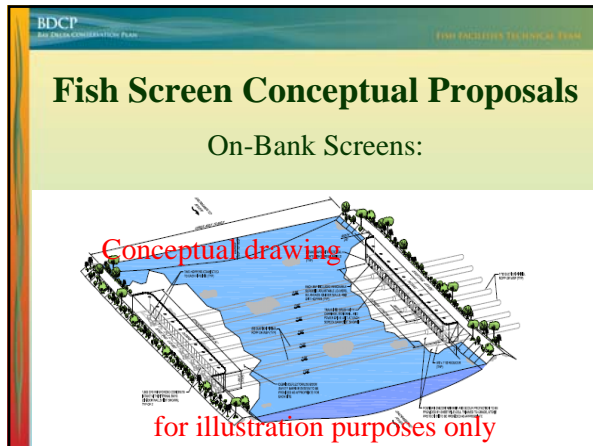
Cylindrical

In-River

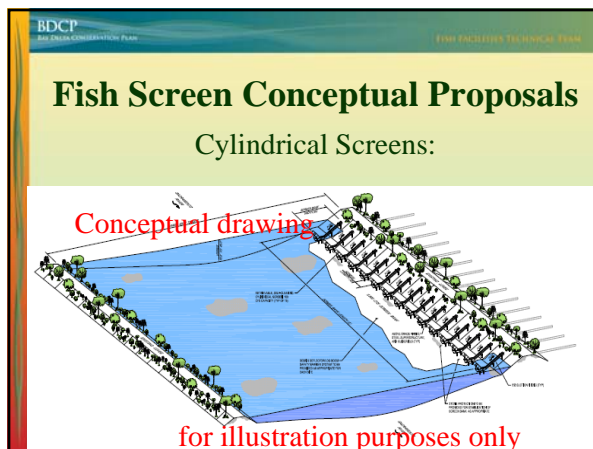


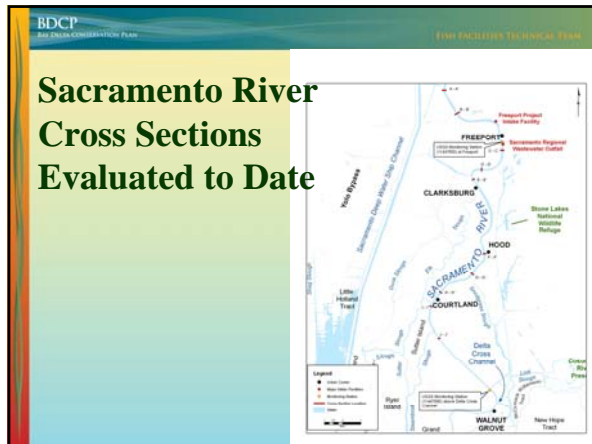












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Fish Facilities Technical Team

Fish Screen Conceptual Proposals

Four Concepts with common features:

- Multiple Locations
- Multiple Modules
- Varying Capacity

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Fish Facilities Technical Team

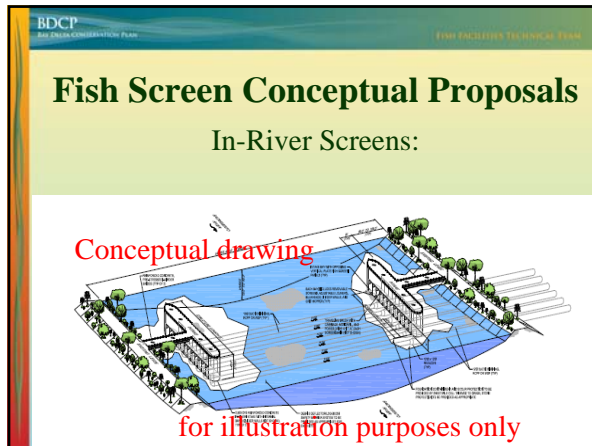
Concept A

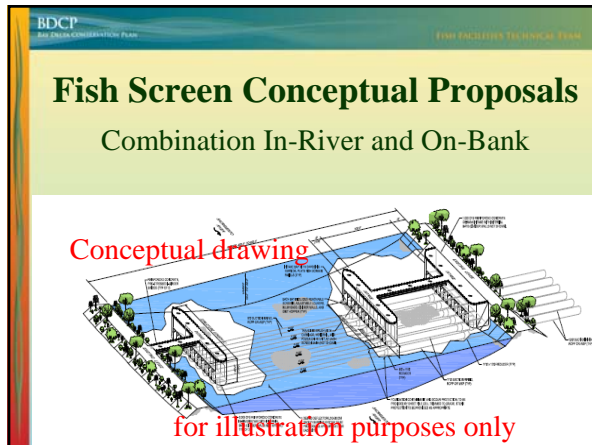
3 Locations:
5,000 cfs each

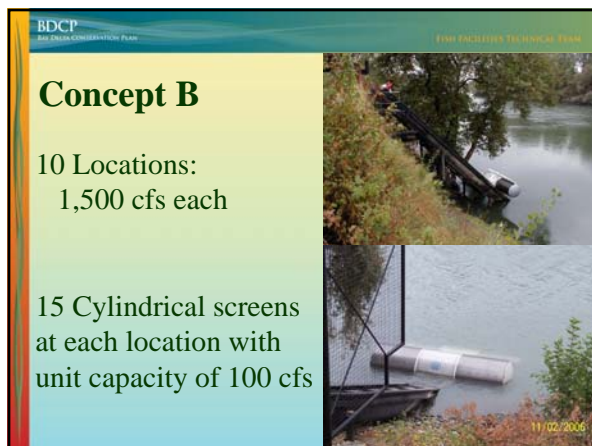
In-River screens

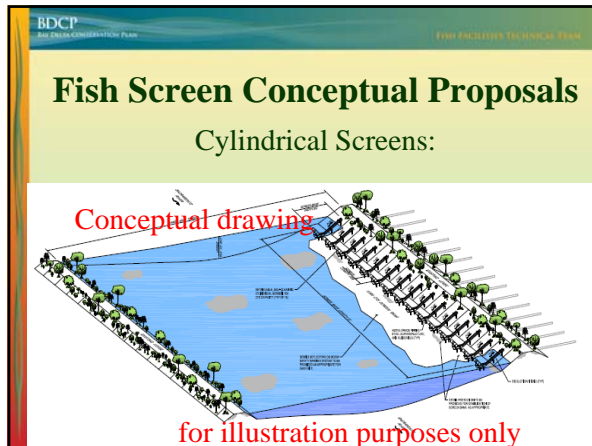
In-River and On-Bank screens

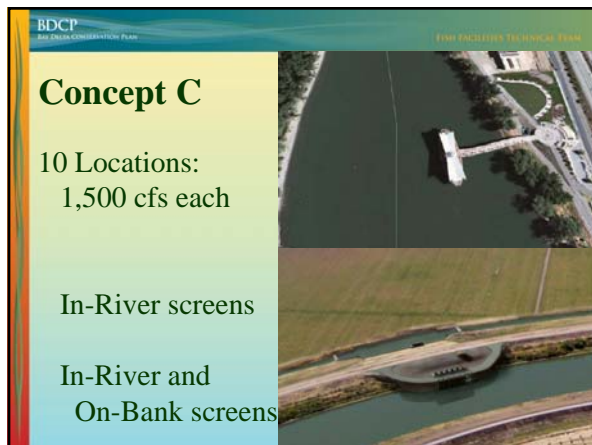
The slide includes two aerial photographs. The top photo shows a river with a large, rectangular structure (likely a screen) in the water. The bottom photo shows a river with a curved structure (likely a screen) on the bank.



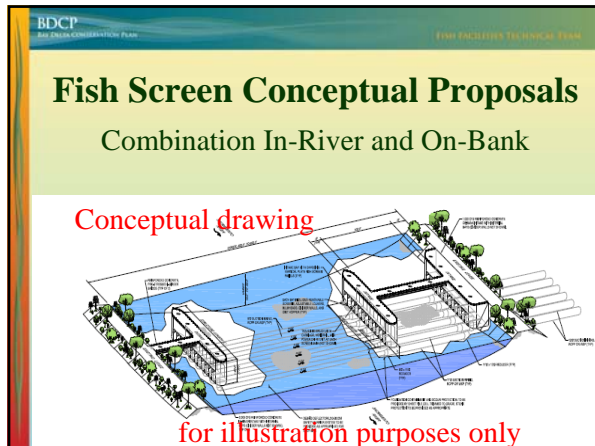


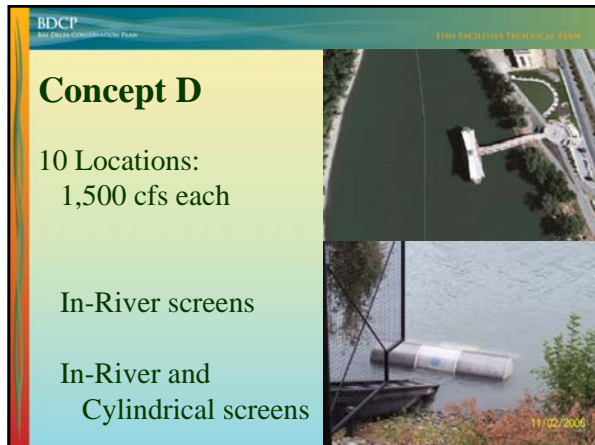




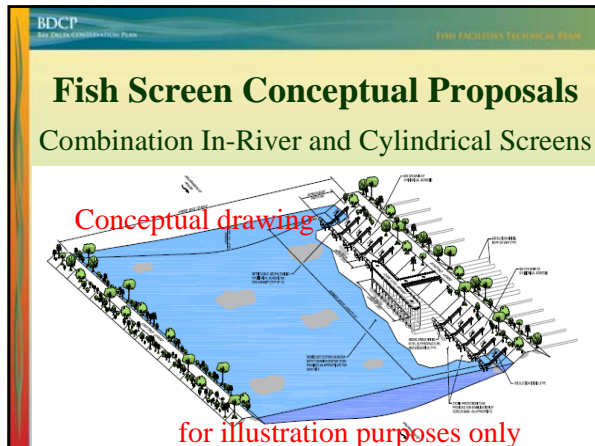


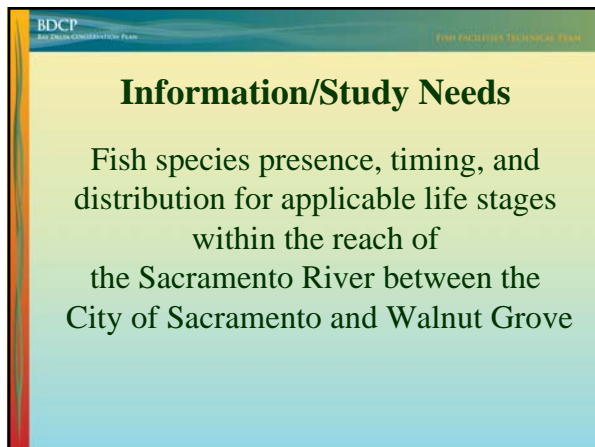


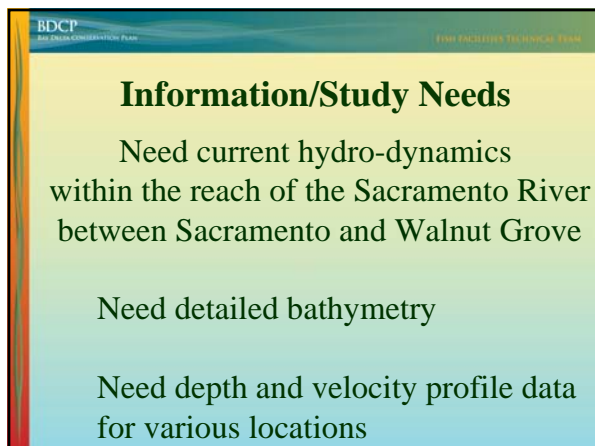












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Information/Study Needs

Need to model the estimated changes to hydro-dynamics associated with the addition of the proposed diversion(s)

Effects of facility on channel flood carrying capacity

Additional analysis may include hydraulic and hydro-dynamic modeling, physical modeling, sediment modeling, 2 dimensional testing of baffle systems ('dynamic baffling'), and further analysis of delta smelt and green sturgeon interaction with fish screen designs.

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Information/Study Needs

Need to consider future hydrologic conditions associated with climate-change

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Information/Study Needs

Need to consider any applicable navigational and flood conveyance regulations established by the US Coast Guard and US Army Corps of Engineers that could affect placement of in-river structures
